

Abstract

[00120] One embodiment of the acoustically-coupled transformer includes a stacked bulk acoustic resonator (SBAR) having a stacked pair of film bulk acoustic resonators (FBARs) with an acoustic decoupler between them. Each FBAR has opposed planar electrodes with piezoelectric material between them. The transformer additionally has first terminals electrically connected to the electrodes of one FBAR and second terminals electrically connected to the electrodes of the other FBAR. Another embodiment includes first and second stacked bulk acoustic resonators (SBARs), each as described above, a first electrical circuit connecting one FBARs of the first SBAR to one FBAR of the second SBAR, and a second electrical circuit connecting the other FBAR of the first SBAR to the other FBAR of the second SBAR. The transformer provides impedance transformation, can linking single-ended circuitry with balanced circuitry or vice versa and electrically isolates primary and secondary. Some embodiments are additionally electrically balanced.